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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,535

02/10/2005

Jeroen Anton Johan Leijten

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EXAMINER

TREAT, WILLIAM M

ART UNIT

PAPER NUMBER

2181

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/27/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/524,535

Applicant(s)

LEIJTEN, JEROEN ANTON
JOHAN

Examiner

William M. Treat

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters; prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/10/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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1. Claims 1-14 are presented for examination.
2. The drawings are objected to because Figs. 1-4 lack descriptive text labels.

Instead, they contain many cryptic initialisms which have no commonly accepted meaning in the art. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 12-14 are directed to computer

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program consisting of instructions which are not stored on a tangible computer-readable medium and which are not executed on a processor.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pechanek et al. (Patent No. 6,101,592) in view of Pechanek et al. (Patent No. 6,173,389) incorporated by reference in Pechanek '592.

6. Pechanek '592 taught the invention of exemplary claim 1, in substance, including a processing apparatus, comprising: an input means for inputting data (157); a register file for storing said input data (PE Config. Register File); at least a first and a second issue slot, wherein each issue slot comprises a functional unit (col. 14, lines 41-46); and wherein the processing apparatus is conceived for processing data retrieved from the register file based on control signals generated from a set of instructions being executed in parallel (col. 6, lines 39-51), the set of instructions comprising at least a first and a second instruction (Fig. 1B), the first issue slot being controlled by a first control word corresponding to the first instruction and the second issue slot being controlled by a second control word corresponding to the second instruction (col. 14, lines 41-46), characterized in that the width of the first control word is different from the width of the second control word (16B).

7. Pechanek '592 did not teach "wherein each issue slot comprises a plurality of functional units". However, Pechanek '389 taught the Pechanek '592 system has the functionality for one instruction (i.e., one issue slot) to access all of the functional units (Fig. 5, element 535, col. 7, lines 40-45). Given Pechanek '592s teaching that "For example, the execution units 131 in the combined SP/PEO can be separated into a set of execution units optimized for the control function, e.g. fixed point execution units, and the PE0 as well as the other PEs can be optimized for a floating point application", one of ordinary skill in the art would be motivated to use the concept of multiple execution units per slot so that a VLIW instruction with multiple floating point (FP) instructions would not find itself blocked from execution by having to await the completion of one multi-cycle FP instruction on one of several FP execution units.

8. As to claim 2, Pechanek '592 taught an apparatus according to Claim 1, wherein said processing apparatus is a VLIW processor and wherein said set of instructions is grouped in a VLIW instruction (Abstract).

9. As to claim 3, Pechanek '592 taught an apparatus according to Claim 2, wherein the VLIW instruction is a compressed VLIW instruction, comprising dedicated bits for encoding of NOP operations (If either compacted instruction is a 15-bit NOP then based upon the type of NOP (bit 7 FIG. 3B) then execute the two compacted instructions sequentially or in parallel". – col. 14, lines 21-25).

10. As to claim 4, Pechanek '592 taught an apparatus according to Claim 3, comprising a decompression means for decompressing the compressed VLIW instruction and wherein the decompression means is conceived to derive information on

the control word width using the dedicated bits (col. 4, line 53 through col. 5, line 63 and col. 6, lines 39-42).

11. As to claim 5, Pechanek '592 taught an apparatus according to Claim 1, which further comprises a connection network for coupling the register file and the issue slots (157).

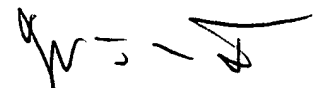
12. As to claim 6, Pechanek '592 taught an apparatus according to Claim 2, wherein the register file is a distributed register file (Fig. 1A, PE Config. Register File in each PE).

13. As to claim 7, Pechanek '592 taught an apparatus according to Claim 1, wherein the width of the first and the second control word is an integer multiple of a predetermined value (Fig. 1B, element 16B).

14. As to claims 8-14, they fail to teach or define over rejected claims 1-7.

15. Any inquiry concerning this communication should be directed to William M. Treat at telephone number (571) 272-4175.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WILLIAM M. TREAT
PRIMARY EXAMINER